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ABSTRACT

Previous research has found that males perform better than females on the pursuit rotor. To examine whether males and females with different sex role orientations would perform differently on a motor task, 120 students (classified as androgynous, traditional sex role, cross-sexed, or undifferentiated, based on scores on the Personal Attributes Questionnaire) were tested on a rotary pursuit apparatus. Tests were run in a sequence of 80 15-second trials with a 15-second rest interval between every four trials. An additional trial was run to obtain the final measure of reminiscence (gains in performance following rest). Males performed significantly better than females, showing nonsignificant differences among all groups of males regardless of sex role. The performance of androgynous women was equal to that of all male groups, while the performance of the feminine (traditional) women was poorer than all other groups of women. Cross-sexed women (masculine) did not perform at the same level as androgynous women. The findings suggest that motor skill acquisition may be related to sex role in women but not in men. (JAC)

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MOTOR SKILL ACQUISITION:
A FUNCTION OF GENDER OR SEX-ROLE?

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Paper presented at the Annual Meeting of the Eastern Psychological Association, Baltimore, MD, April 12-15, 1984.

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1. Title: Motor Skill Acquisition: A function of gender or sex-role?

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3. Sponsor: N/A

4. Short Abstract: On the pursuit rotor, sex role (femininity) was related to poor performance and higher reminiscence only in females. Overall, males performed significanlty better than females. Androgynous women performed as well as all groups of men. Masculine and undifferentiated women performed equally but significantly poorer than comparable male groups.

5. Topical Session Preference: Personality; Sex differences; Personality; Other-Sex roles

6. Slides will not be used.

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1. Title of Paper: Motor Skill Acquisition: A function of gender or sex role?

2. Topical Session Preference: Personality; Sex differences or sex-role

3. Purpose: The question of interest was whether males and females with different sex role orientations would perform in a manner that was inconsistent with the well established sex difference typically found in rotary pursuit performance i.e., males having significantly longer time-on-target while females show greater gains in performance following rest (reminiscence). According to Noble (1978) and Schmidt (1982) male superiority on the pursuit rotor may be a function of transfer from unspecifiable previous experience and not a consequence of males innate superiority on this task. By examining men and women with different sex role orientations the present study attempted to examine the possible effects that different childhood experiences (indirectly) inferred from differences in sex role orientation) may contribute to performance on a motor task. A large body of data (e.g., Kelly & Worell, 1976; Orlofsky, 1979; Spence & Helmreich, 1978) indicate that individuals with different sex role orientations have different experiences with their parents i.e., androgynous women were encouraged to be self-reliant, achievement oriented and intellectually competent. One may conclude therefore, that androgynous women may have felt free to engage in "nontraditional" tasks that could lead to improved motor skill performance (relative to traditional women).

4. Subjects:

From a pool of 679 students who completed the short form of the Personal Attributes Questionnaire (PAQ) (Spence, 1974, 1975), 15 androgynous males and females, 15 males and females with a traditional sex role, 15 cross sexed males and females and 15 undifferentiated males and females served as subjects.

5. Procedure:

Each of the 120 subjects were individually tested on the rotary pursuit apparatus in a sequence of 80 15 second trials with a 15 second rest interval between every four trials. An additional trial was run in order to obtain the final measure of reminiscence.

6. Results:

A 2x4x4 (sex by sex role by block of 4 trials) ANOVA yielded a main effect for sex of subject $F(1, +12) = 12.29$, $P < .01$, indicating males spent more time on target than females. A main effect for blocks $F(3,336) = 576.61$, $P < .001$, and lack of any significant interactions indicated that males and females, regardless of sex role acquired the skill at approximately the same rate. Planned comparison one-failed t - tests were conducted on asymptotic performance in block four. Comparison of time-on-target (TOT) between androgynous and feminine females indicated a significant difference existed between the two groups $t(28) = 2.25$, $P < .025$, indicating the performance of androgynous females was significantly better than that of feminine females. There were no differences in TOT between the androgynous women and any of the male groups. There were no differences in TOT between the undifferentiated, feminine and cross sexed women.

Planned comparisons on reminiscence scores following block four indicated no differences among any of the male groups. Feminine females had the highest reminiscence scores (x=1.11) compared to androgynous (.50), cross sexed (.42) and undifferentiated (x=1.02). The difference between feminine and androgynous and cross sexed was significant $t(43) = 1.94$, $P < .05$.

7. Implications and Conclusions: The present study replicated previous research which found males performing significantly better than females on the pursuit rotor. Block four acquisition data, however, suggests that sex role may be a factor in motor skill acquisition for females. This conclusion is based on the fact that the performance of androgynous women was equal to that of all male groups and the fact that the performance of the feminine (traditional) women was poorer than all other groups of women. It therefore, appears that femininity is related to poor performance on motor tasks in females and not males. It was surprising that the cross sexed women (masculine) did not perform at the same level of the androgynous women. According to Orlofsky (1979) the parents of masculine women are rejecting and not encouraging of intellectual achievement. He concludes that the strength and independence of the masculine women may be self-protective..."an autonomy and toughness reached by self-protective withdrawal...(p.509)." If Orlofsky's (1979) data are correct then masculine women may not

have had the freedom to experience all that the androgynous women may have experienced and suggests that female performance on motor tasks may be related to the type of parental environment a woman receives and the types of interests she develops and experiences she has as a result of that parental encouragement.

The reminiscence data of the present study, (feminine females reminisced more than androgynous and masculine women) suggests that feminine women generated higher levels of reactive inhibition (I_r). The combined acquisition and reminiscence data, therefore, suggest that motor skill acquisition may be realted to sex role in women and not men.

Nonsignificant differences among all groups of males, regardless of sex-role, may be explained by the more intense socialization into the typical male role that all boys experience (Maccoby & Jacklyn (1979). One might conclude, therefore , that most boys have similar experiences and this similarity may be responsible for the lack of differences among the male groups.

Kelly, J. A., & Worell, J. Parent behaviors related to masculine, feminine, and androgynous sex role orientations. Journal of Consulting and Clinical Psychology. References 1976, 44, 843-851.

Maccoby, E. E., & Jacklyn, C. N. The psychology of sex differences. Standford, Cal.: Stanford University Press, 1974.

Noble, C. E. Age, race, and sex in the learning and performance of psychomotor skills. In R. T. Osborne, C. E. Noble, & N. Weyl (Eds.), Human Variation: the biopsychology of age, race, and sex. New York: Academic Press, 1973.

Orlofsky, J. L. Parental antecedents of sex-role orientation in college men and women. Sex Roles, 1979, 5, 495-512.

Schmidt, R. A Motor control and learning: a behavioral emphasis. Champaign, Ill.: Human Kinetics, 1982.

Spence, J. T., Helmreich, R. & Stapp, J. The Personal Attributes Questionnaire: A measure of sex role stereotypes and masculinity-femininity. Journal Supplemental, Abstract Service Catalog of Selected Documents in Psychology, 1974, 4(4, (Ms. NO. 617).

Spence, J. T. & Helmreich, R. Masculinity and femininity. Austin: University of Texas Press, 1978.

Spence, J. T., Helmreich, R. L., & Stapp, J. Ratings of self and peers on sex role attributes and their relation to self-esteem and conceptions of masculinity-femininity. Journal of Personality and Social Psychology, 1975, 32, 29-39